

Listing of Claims:

1. (Currently Amended) A method for identifying cell matrix signaling (CMS) pathway induced genes that are modulated during vascular or proliferative diseases and related disorder comprising:

- a) adding one or more vascular disease stimuli to a first cell culture of endothelial cells;
 - b) adding one or more vascular disease stimuli to a second cell culture of smooth muscle cells;
 - c) adding one or more vascular disease stimuli to a third cell culture of endothelial cells and smooth muscle cells ~~in co-culture~~ wherein the endothelial and smooth muscle cells are cultured together;
 - d) measuring the amount of vascular disease markers in a), b), and c); ~~and~~
 - e) comparing the amount of the vascular disease markers in a), b) and c) to each other and to controls of untreated cell cultures or co-cultures;
- wherein the vascular disease stimuli is AGE, insulin, IL-1 β , TNF- α or a combination thereof.

2. (Cancelled)

3. (Original) The method of Claim 1, wherein the vascular disease marker is interleukin 6 (IL-6), interferon-inducible protein-10 (IP-10), monokine induced by gamma-interferon (MIG), interferon-inducible T-cell alpha chemoattractant (I-TAC), vascular adhesion molecule-1 (VCAM-1), or monocyte chemoattractant protein-1 (MCP-1).

4. (Original) The method of Claim 1, wherein the smooth muscle cells are layered over the endothelial cells in co-culture.

5. (Original) The method of Claim 4, wherein the smooth muscle cells and the endothelial cells are layered in a specific ratio.

6. (Original) The method of Claim 5, wherein the ratio is 1:1, 1:2, 1:3, or 1:4.

7. (Currently Amended) A method for identifying compounds that regulate CMS pathway induced genes comprising:

a) adding one or more vascular disease stimuli and a test compound to a first cell culture of endothelial cells;

b) adding one or more vascular disease stimuli and the test compound to a second cell culture of smooth muscle cells;

c) adding one or more vascular disease stimuli and the test compound to a third cell culture of endothelial cells and smooth muscle cells ~~in co-culture~~ wherein the endothelial and smooth muscle cells are cultured together;

d) measuring the amount of vascular disease markers in a), b) and c); ~~and~~

e) comparing the amount of the vascular disease markers in a), b) and c) to each other and to endothelial cells, smooth muscle cells, and co-cultures thereof which are untreated, treated with only test compound, or treated with only vascular and proliferative disease stimuli; and

wherein the vascular disease stimuli is AGE, insulin, IL-1 β , TNF- α or a combination thereof.

8. (Cancelled)

9. (Original) The method of Claim 7, wherein the vascular disease marker is IL-6, IP-10, MIG, I-TAC, VCAM-1, or MCP-1.

10. (Original) The method of Claim 7, wherein the test compound is an oligonucleotide, ribozyme, antisense oligonucleotide, peptide, peptoid, small organic molecule or small inorganic molecule.

11. (Original) The method of Claim 10, wherein the test compound is an oligonucleotide complementary to the 5' region of the CMS pathway induced gene.

12. (Original) The method of Claim 10, wherein the test compound is a ribozyme molecule that blocks translation of the CMS pathway induced gene.

13. (Currently Amended) The method of Claim 10 wherein the test compound binds ~~the~~ a protein product of the CMS induced gene.

14-23. (Cancelled)

24. (Currently Amended) A method for identifying compounds that regulate CMS pathway induced gene protein product activity comprising:

(a) adding one or more vascular or proliferative disease stimuli and a test compound to a first cell culture of endothelial cells;

(b) adding one or more vascular or proliferative disease stimuli and the test compound to a second cell culture of smooth muscle cells;

(c) adding one or more vascular or proliferative disease stimuli and the test compound to a co-culture of endothelial cells and smooth muscle cells wherein the endothelial and smooth muscle cells are cultured together;

(d) measuring the amount of CMS pathway induced gene protein product activity in (a), (b), and (c); ~~and~~

(e) comparing the amount of CMS pathway induced gene protein product activity in (a), (b), and (c) to each other and to endothelial cell cultures, smooth muscle cell cultures and co-cultures of endothelial cells and smooth muscle cells which are untreated, treated with only test compound, or treated with only vascular and proliferative disease stimuli; and

wherein the vascular disease stimuli is AGE, insulin, IL-1 β , TNF- α or a combination thereof

25. (Previously Presented) A method for regulating an activity of a protein product of a CMS pathway induced gene comprising:

(a) identifying one or more compounds which affect the activity of CMS pathway induced gene protein products by the method of Claim 24; and

(b) administering an effective amount of one or more of said compounds to a patient.

26. (Cancelled)

27. (Previously Presented) The method of Claim 7, wherein the test compound has an unknown effect on smooth muscle cells, an unknown effect on endothelial cells, or an unknown effect on both smooth muscle cells and endothelial cells.

28. (Previously Presented) The method of Claim 1, wherein the one or more vascular disease stimuli is a single vascular disease stimulus.

29. (Previously Presented) The method of Claim 7, wherein the one or more vascular disease stimuli is a single vascular disease stimulus.

30. (Previously Presented) The method of Claim 24, wherein the one or more vascular disease stimuli is a single vascular disease stimulus.